



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/734,429

12/12/2003

William S. Wong

D/A3602

3875

7590

02/09/2006

Patent Documentation Center

Xerox Corporation

Xerox Square 20th Floor

100 Clinton Ave. S.

Rochester, NY 14644

EXAMINER

QUACH, TUAN N

ART UNIT

PAPER NUMBER

2826

DATE MAILED: 02/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-------------------------------|-----------------------------|--|
| Office Action Summary | Application No. 10/734,429 | Applicant(s) WONG ET AL. | |
| | Examiner Tuan Quach | Art Unit 2826 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 November 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 6,9 and 18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5,7,8,10-17 and 19-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.


Tuan Quach
Primary Examiner

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>3/15/05&1/21/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The election filed November 18, 2005 has been received. Applicant elects the species depicted in Fig. 5 and indicates that claims 1-5, 7-8, 10-17 and 19-26 correspond thereto. Claims 6, 9, 18 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on November 18, 2005.

The incorporation of essential material in the specification by reference to an unpublished U.S. application, foreign application or patent, or to a publication is improper. Applicant is required to amend the disclosure to include the material incorporated by reference, if the material is relied upon to overcome any objection, rejection, or other requirement imposed by the Office. The amendment must be accompanied by a statement executed by the applicant, or a practitioner representing the applicant, stating that the material being inserted is the material previously incorporated by reference and that the amendment contains no new matter. 37 CFR 1.57(f).

Applicant is further requested to indicate which portion of the publication delineated in [0019] and [0021] regarding the Technology and Applications of Amorphous silicon being relied upon, including the page numbers of the portion being relied upon, to be incorporated by reference in its entirety. Applicant is further requested to provide the Office a copy of the reference being relied upon for

Art Unit: 2826

incorporation by reference. Applicant is requested to provide a copy of the publication in [0031] to Lu et al.

Claims 7, 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 7, 8 line 1, "the semiconductor" lacks antecedent basis.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-3, 7, 8, 11-17, 19-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawase in view of the admitted prior art. (APA).

Kawase 2003/0141807 teach thin film transistor having increased channel width to increase mobility in organic semiconductor. Kawase teaches, [0001]-[0129], display

Art Unit: 2826

devices having pixels including organic material and the display elements having associated thin film transistors operating on the pixel of the display wherein the problem of low mobility in organic TFTs was discussed and the solution of increasing the channel width and reducing the channel length is also taught, e.g., [0093]-[0096], wherein such would permit optimization of drain current to permit the use of relatively low mobility organic/polymer transistor. Although Kawase lack the explicit recitation that the channel width being longer than the shorter of either dimension of the associated pixel, nonetheless, such would follow given the magnitude of the channel width employed in Kawase, to be extremely long channel width, [0095], including in excess of 1000 microns thus is not limited to below or shorter than either pixel dimensions and since the pixel dimensions are acknowledged by applicant to be typically range from 85 to 500 microns, e.g., instant specification [0026]. Regarding claims 2 and 26, it would have been obvious to have optimized the ratio of channel width to length to obtain the desired mobility in view of the teachings of the prior art above, including [0096], e.g., to maximize the channel width and to minimize the channel length of the organic TFTs and such would have been obvious and apparent when the conventional organic material having the appropriate mobility is employed. Regarding claim 3, the use of pixel squares would have obvious as admitted by applicant, instant specification [0024]. Regarding claim 4 5, 10, the use of one or at least two bends in the channel is shown in Kawase, Fig. 13, including surrounding the drain electrode, [0094]. Regarding claims 7, 8, and 22 the use of organic or polymeric semiconductor material is well known and further taught in Kawase supra, including [0107], and wherein the selection of the numerical value of

Art Unit: 2826

the mobility would have been obvious given the appropriate corresponding material employed. Regarding claim 11, the use of backlit liquid crystal material is well known as admitted by applicant, [0031]; alternatively, such use of conventional material is notoriously conventional and would not require any inventiveness and would have been obvious. Regarding claims 12-17, the use of gate line, e.g., 108, to couple to the gate electrode, e.g., 104, and channel surrounds the drain electrode, and the source and drain electrode and the channel associated therewith is also shown, Fig. 13. Regarding claims 19-21, and 23-25 employing associated desired number of thin film transistors including to two or three transistors, and thus gate lines, corresponding data lines, and drive and sensing circuits for connections to the TFTs, such have been obvious to complete the necessary connections, e.g., as evidenced in Kawase, [008], Figs. 2, 4 wherein the corresponding connections to the data lines and to the gate lines of the respective transistors are apparent, Fig. 8, [0030], [0039], [0079] and as acknowledged in the instant specification, [0019], Fig. 2, [0014].

Claims 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawase taken with APA as applied to claims 1-3, 7, 8, 11-17, 19-26 above, and further in view of Yamazaki et al.

In addition to the reasons delineated above, Yamazaki et al. 2002/00272229 further evidences the additional desired numbers of gate line, e.g., first gate line, second gate line, and third gate lines, Fig. 11B, [0118]. It would have been further obvious to recite the desired number of gate lines including three gate lines as further

Art Unit: 2826

evidenced by Yamazaki et al. The completion of connections for drive circuits and sensing circuits would have been conventional and obvious as delineated above.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ishihara et al. 6,300,988 is made of record.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Tuan Quach whose telephone number is 571-272-1717. The examiner can normally be reached on M-F from 8:30 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Nathan Flynn, can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Tuan Quach
Primary Examiner